REMARKS

In reply to the Office Action dated April 11, 2005, Applicant has amended claims 7-10, 27, and 45 to more appropriately claim the invention and expressly recite features that are inherent in the words of the original claims. Claims 7-10 and 27-70 are currently pending in this case, of which claims 31-44, and 49-70 have been withdrawn by the Examiner.

In the Office Action, the Examiner rejected claims 27-30 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter because they have no "technological basis," rejected claims 7-10 and 45-48 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter because the claims recite "modules," and rejected claims 7-10, 27-30, and 45-48 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,070,151 to Frankel ("*Frankel*") in view of an article by Wheeler ("*Wheeler*") entitled "Evaluating Mortgage-Backed Securities with Total Rate of Return Simulation," Bank Accounting and Finance, Spring 1992.

35 U.S.C. § 101 Rejections

The Examiner rejected claims 27-30 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter because these claims "do not claim a technological basis in the preamble and body of the claim" and cited *Ex Parte Bowman* for support. Applicant disagrees because, among other things, *Ex Parte Bowman* is a non-precedential decision and because "a technological basis" is not a requirement for a patent claim under the United States Constitution or Chapter 35 of the United States Code. Thus, the Examiner has no sound legal basis for such a position.

Nonetheless, solely to more rapidly advance prosecution, Applicant has amended claim 27 to recite that certain operations in the method are performed using at

least one data processing system. This amendment moots the rejection of claims 27-30 under 35 U.S.C. § 101, and Applicant requests that the rejection of these claims be withdrawn.

The Examiner also rejected claims 7-10 and 45-48 under 35 U.S.C. § 101 as being directed to non-statutory subject matter because "the sole apparatus limitations are recitations of 'modules', which in an alternative interpretation may be considered non-statutory subject matter per se" because module may be interpreted to mean "solely software which is non patentable subject matter per se." Applicant disagrees because, among other things, there is no legal basis for the position that software "is non patentable subject matter per se." Furthermore, according to the United States Constitution, Chapter 35 of the United States Code, the Supreme Court of the United States, numerous rulings of the United States Court of Appeals for the Federal Circuit, and the M.P.E.P., any useful invention made by man, which includes software, is patentable. Thus, the Examiner has no sound legal basis for the rejection of claims 7-10 and 45-48.

Nonetheless, solely to more rapidly advance prosecution, Applicant has amended claims 7 and 45 to recite apparatus other than "modules." This amendment moots the rejection of claims 7-10 and 45-48 under 35 U.S.C. § 101, and Applicant requests that the rejection of these claims be withdrawn.

35 U.S.C. § 103(a) Rejections

In the Office Action, the Examiner rejected claims 7-10, 27-30, and 45-48 under 35 U.S.C. § 103(a) as being unpatentable over *Frankel* in view of *Wheeler*.

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, the Examiner must factually demonstrate that (1) *Frankel* and *Wheeler* disclose or suggest each and every element recited in the claims; (2) there is a reasonable expectation of success for any modification of the teachings of *Frankel* and *Wheeler*, and (3) there exists some suggestion or motivation, either in the references or in the knowledge generally available to one of ordinary skill in the art, to modify the references or combine the teachings of *Frankel* and *Wheeler*. *See* M.P.E.P. §§ 2142, 2143 (8th ed., May 2004 rev.). Furthermore, each of these requirements must be found in the prior art – not in Applicant's own disclosure. *See id.* For at least the reasons stated below, Applicant traverses the section 103 rejections because the Examiner has failed to factually demonstrate that *Frankel* and *Wheeler* disclose or suggest each and every element recited in the claims and that there is a reasonable expectation of success for any modification of the teachings of *Frankel* and *Wheeler*.

Independent Claims 7, 27, and 45

Independent claim 7 recites, among other things, a data processing system, comprising a processor adapted to: analyze risk elements of interest-rate derivative and mortgage pool components, develop plans for structuring securities based on selected interest-rate derivative and mortgage pool components such that each plan overcomes an artificial leverage limitation imposed by mortgage security regulatory structuring constraints; validate a securities structuring plan and initialize files for securities to be issued under the validated plan; and administer securities issued under the validated plan. Independent claims 27 and 45 recite similar features.

Frankel, in contrast, teaches a system implementing a method of restructuring mortgage-backed assets (the "underlying securities" or "collateral") to create new mortgage-backed securities (the "structured securities"). (Abstract, col. 5, line 53 –col. 6, line 9). *Frankel*'s system measures the present value of the underlying securities' interest and principal cash flows under varying circumstances and uses user-provided input to allocate the cash flows to the structured securities. (Col. 3, line 65 - col. 4, line 12). *Frankel* teaches that the new structured securities (REMICs) are created with two tiers of underlying mortgage-related securities. (Col. 4, lines 27-48). The first tier consists of variable-rate underlying securities and the second tier consists of two interest-only securities (each an "IO") and two principal-only securities (each a "PO"), or combinations of these IOs and POs, backed by the variable-rate, first-tier securities. (Col. 5, line 64 – col. 10, line 32). Assuming that the variable-rate, first-tier securities accrue interest at different levels of an index, the *Frankel* system allocates the principal and interest of the variable-rate, first-tier, collateral securities among the interest-only and principal-only second-tier, structured securities so as to maximize the present value of these cash flows. (Col. 3, line 54 - col. 4, line 16).

Frankel teaches that the collateral for the new structured security must be limited to mortgages and mortgage-backed securities ("MBS") that qualify as REMIC assets and describes formulae qualifying the structured securities as REMIC regular interests. (Abstract, col. 2, lines 16-18; col. 6, lines 3-9; col. 10, line 33 – col. 17, line 23). Accordingly, the aggregate cash flow of the collateral must be identical to that of the structured securities. (Col. 2, lines 1-9; col. 16, lines 58-65; Fig. 7).

Thus, *Frankel* does not teach or suggest several elements recited in claim 7. *Frankel* does not teach or suggest a plan to overcome an artificial leverage limitation imposed by mortgage security regulatory structuring constraints because *Frankel*'s securities comply with, rather than overcome, these constraints. *Frankel* does not address overcoming the rules or regulations for REMICs that affect leverage, such as the limitation that the REMIC securities be funded entirely with cash flows from qualified REMIC assets and the limitation that the interest formulae of REMIC securities be restricted to certain authorized rates. *Frankel*'s securities are funded entirely with cash flows from qualified REMIC assets and the interest rates on the *Frankel* securities are restricted to interest rates authorized by the REMIC regulations.

Further, *Frankel* does not teach or suggest administering the securities issued under a plan according to claim 7 because *Frankel*'s securities do not conform to any plan to overcome an artificial leverage limitation imposed by mortgage security regulatory structuring constraints; for example, by administering combined cash flows from interest-rate derivative components with the cash flows of mortgage pool components (such as variable-rate REMIC securities) placed in a grantor trust.

The Examiner contends that *Frankel* discloses a plan to overcome an artificial leverage limitation imposed by mortgage security regulatory structuring constraints in columns 2-4. (Office Action at 4). Applicant disagrees with the Examiner. *Frankel* teaches that although REMIC regulations allow a REMIC regular interest to pay interest according to several specified formulas, they do not "directly provide for" payment of a variable percentage of the total interest on the collateral keyed off of a specified index

level. (Col. 2, lines 50-62). *Frankel*'s interest rates, however, do comply with the REMIC rules and thus, do not overcome any limitations.

Frankel teaches a system for restructuring REMIC assets to create REMIC regular interests that address the drawbacks of: 1) significant performance changes caused by unanticipated mortgage loan prepayment rates, and 2) purchase prohibition for institutional investors of IO securities that have relatively little or no principal amount. (Col. 3, lines 13 - 53). However, these are not drawbacks imposed by the REMIC regulatory structuring constraints. Rather, they are merely attributes of certain kinds of REMIC interests. Both are "drawbacks" of an IO. Only the first is a "drawback" of a PO. And neither is a "drawback" of a REMIC floating rate security (a "FLT").

Thus, although *Frankel* identifies drawbacks associated with particular REMIC interests, each such drawback is avoided simply by selecting a REMIC interest, for example a FLT, with the desired attributes.

Figure 2 of the present application shows one example of an artificial leverage limitation that is imposed by the REMIC rules that one of ordinary skill would consult to understand the scope and meaning of the claims. If the REMIC to be funded with the PCs shown issues the PAC classes shown, and issues a FLT with the interest rate shown, as market conditions would require, then the REMIC rules do not permit the issuance of the FLT in the principal amount of $92,857,143 as shown in Figure 2. The REMIC rules limit the size of the FLT to $76,470,588 or, using customary commercial language, limit the leverage to $76,470,588 / $23,529,412 = 3.25. *Frankel* does not teach a plan to overcome this, or any other, limitation imposed by the REMIC regulations, but instead addresses different problems. Accordingly, *Frankel* does not

teach or suggest a plan to overcome an artificial leverage limitation imposed by mortgage security regulatory structuring constraints, as recited in claim 7.

As the Examiner admits in the Office Action, *Frankel* does not teach or suggest an interest-rate derivative component because *Frankel* teaches that "[t]he underlying securities must qualify as collateral in a CMO/REMIC under REMIT [*sic*] regulations" (col. 6, lines 7-8), which means that the collateral is limited to mortgages and mortgage-backed securities ("MBS") that qualify as REMIC assets, thus excluding interest-rate derivative components. Consequently, as the Examiner admits, *Frankel* cannot teach or suggest analyzing risk elements of interest-rate derivative components or developing plans for structured securities based on selected interest-rate derivative components without an interest-rate derivative component teaching.

In the Office Action, the Examiner relied on *Wheeler* as teaching analyzing risk elements of interest-rate derivatives components, as recited in claim 7. (Office Action at 4). Applicant disagrees with the Examiner's interpretation of *Wheeler* because *Wheeler* does not analyze "interest-rate derivatives."

Wheeler does not teach or suggest the value or use of any type of interest rate derivate (such as an interest-rate swap or other derivative) in the disclosed total rate of return analysis. Instead, *Wheeler* teaches a methodology for valuing mortgage-backed securities utilizing commonly available models and assumptions to perform a total rate of return simulation. (*Wheeler* at 1). Most mortgages pooled in mortgage-backed securities contain terms that allow the borrower to prepay the mortgage at any time without a financial penalty. (Id. at 2-3). In economic terms, the borrower has an option to prepay the mortgage. (Id.). Parties to any financial transaction value the transaction

at any point in time by making assumptions about such elements as the duration of the transaction and expectations for interest rates in the future. (Id. at 2). If a borrower prepays a mortgage, often the reason is to refinance the property at a lower interest rate. (Id. at 1). Consequently, the lender potentially receives principal back at a time when reinvestment will take place at a lower interest rate. (Id. at 3). *Wheeler* teaches calculations that take into account the potential for prepayment under various interest rate scenarios and the present value of the principal and interest cash flows under those circumstances. (Id. at 4-7). Significantly, *Wheeler* teaches analyzing the cash flows of mortgage-backed securities only, not other instruments, under various interest rate and prepayment rate scenarios using an iterative methodology geared toward maximizing total rate of return.

In the Office Action, the Examiner contends that *Wheeler* teaches analyzing risk elements of interest-rate derivative components at page 3, paragraphs 1-6. This portion of *Wheeler*, however, discusses the causes and effects of prepayment risk (which *Wheeler* calls "options risk") for mortgage-backed securities. The Examiner's contention impermissibly ignores the recitation "of interest-rate derivative components" in claim 7, because even assuming, arguendo, that *Wheeler* teaches analyzing risk elements, prepayment risk is not, and does not suggest, an interest-rate derivative component. In fact, *Wheeler* contains no teaching or suggestion related to any kind of derivative component or derivative, and the combination of *Wheeler* and *Frankel* does not teach or suggest "analyzing risk elements of interest-rate derivatives components," as recited in claim 7

In addition, because *Wheeler* has no teachings related to interest-rate derivatives, as explained above, there can be no reasonable expectation of success in combining *Frankel* and *Wheeler* to produce the claimed invention, because the combination would not produce the claimed invention.

For at least the reasons stated above, the Examiner has not factually demonstrated a prima facie case of obviousness. Neither *Frankel* nor *Wheeler*, whether taken alone or in combination, disclose or suggest all the elements recited in independent claim 7, and thus this claim is allowable over the cited references. Independent claims 27 and 45, which recite distinguishing features similar to those recited in claim 7, are allowable for at least the same reasons. Further, the Examiner has not demonstrated a reasonable expectation of success in combining *Frankel* and *Wheeler* to produce the claimed invention, and claims 7, 27, and 45 are allowable for this reason as well. In addition, Applicant submits that claims 8-10, 28-30, and 46-48, which depend either directly or indirectly from claims 7, 27, and 45, are also allowable for at least the foregoing reasons. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 rejections of all these claims.

Claims 10 and 48

In the Office Action, the Examiner rejected claims 10 and 48 as being obvious in view of *Frankel*. Applicant traverses these rejections because *Frankel* does not teach or suggest all the elements recited in claims 10 and 48.

Claim 10, for example, recites "evaluating derivatives for a proposed plan based on data from processing projected cash flows from the asset pool prepayment model

and determining whether the projected cash flows are sufficient to meet predetermined payment obligations and a derivatives model." Claim 48 recites similar features.

As explained above, neither *Frankel* nor *Wheeler* suggests or teaches anything related to an interest-rate derivative component. Similarly, neither *Frankel* nor *Wheeler* discloses or teaches anything related to "evaluating derivatives" or "a derivatives model" as recited in claims 10 and 48. Moreover, the Examiner apparently admits as much with respect to *Frankel*, stating "*Frankel* does not specifically teach or suggest a risk analysis and planning module that analyzes risk elements of interest-rate derivative components." (Office Action at 4).

Accordingly, for this additional reason, the Examiner has not factually demonstrated a *prima facie* case of obviousness for claims 10 and 48. Neither *Frankel* nor *Wheeler*, whether taken alone or in combination, disclose or suggest all the elements recited in claims 10 and 48, and thus these claims are allowable over the cited references.

Claims 28 and 29

In the Office Action, the Examiner rejected claims 28 and 29 as being obvious in view of *Frankel*. Applicant traverses these rejections because *Frankel* does not teach or suggest several elements recited in claims 28 and 29.

Claim 28 recites "[t]he method of claim 27 wherein the one or more pools of mortgage securities have floating rate (FLT) and inverse floating rate (INV) classes and the FLT and INV classes are exchanged for cash flows from a derivative contract." Claim 29 recites "[t]he method of claim 28 wherein the derivative contract comprises

and exchange of fixed rate cash flows from the mortgage securities for variable rate cash flows from the derivative contract."

As explained above, neither *Frankel* nor *Wheeler* suggests or teaches anything related to an interest-rate derivative component. Similarly, neither *Frankel* nor *Wheeler* discloses or teaches anything related to "a derivative contract" as recited in claims 28 and 29. Moreover, the Examiner apparently admits as much with respect to *Frankel*, stating "*Frankel* does not specifically teach or suggest a risk analysis and planning module that analyzes risk elements of interest-rate derivative components." (Office Action at 4).

Accordingly, for this additional reason, the Examiner has not factually demonstrated a *prima facie* case of obviousness for claims 28 and 29. Neither *Frankel* nor *Wheeler*, whether taken alone or in combination, disclose or suggest all the elements recited in claims 28 and 29, and thus these claims are allowable over the cited references.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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